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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.   | CONFIRMATION NO. |
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| 10/748,949   | 12/30/2003  | Sriram Natarajan     | CISCP848              | 7877             |
| 26541  | 7590        | 01/31/2008           |                       |                  |
| Cindy S. Kaplan<br>P.O. BOX 2448<br>SARATOGA, CA 95070 |             |                      | EXAMINER<br>MUI, GARY |                  |
|  |             |                      | ART UNIT              | PAPER NUMBER     |
|  |             |                      | 2616                  |                  |
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|  |             |                      | 01/31/2008            | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/748,949

Applicant(s)

NATARAJAN ET AL.

Examiner

Gary Mui

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 21-23 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/ are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

***Response to Arguments***

1. Applicant's arguments with respect to claims 1 - 18 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Objections***

2. Claim 19 is objected to because of the following informalities:

For claim 19, the period is missing to end the sentence; it is suggested to the applicant to insert a period to the end of the sentence.

Appropriate correction is required.

***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 9 – 16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

For claims 9 – 16, the claims are directed to a computer program *per se*, which is non-statutory subject matter. In the original disclosure on page 15 lines 17 – 18 it states “A carrier wave that carries the code across a network is another example of a computer-readable storage medium”; propagated signals is nonfunctional descriptive material. When nonfunctional descriptive material is recorded on some computer-readable medium, in a

computer, it is not statutory since non requisite functionality is present to satisfy the practical application requirement.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 2, 4, 7 – 10, 12, and 15 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kloth et al. (US 2004/0081108; hereinafter “Kloth”) in view of Admitted Prior Art (hereinafter “APA”).

For claims 1, 9, 17, and 18, Kloth teaches locally generating ready indications for the plurality of local Fibre Channel ports (see paragraph 0061; the grant messages are generated as the available messages are received); and distributing transmission of the ready indications among the local Fibre Channel ports responsive to a desired bandwidth sharing between Fibre Channel links terminated by the plurality of local Fibre Channel ports (see paragraph 0061; the arbiter distributes the grant messages to the input ports when it receives the available message that indicates that there is available capacity). Kloth fails to teach the transmission of the ready indication to the local Fibre Channel ports are delayed based on the desired bandwidth sharing. However, APA teaches that flow control is handled by throttling the Fibre Channel ready indications (see page 3 lines 9 - 10 of the specifications). Therefore, it would have been obvious to one skilled in the art at the time of the invention to delay ready indications as taught by the APA into Kloth's arbitration system. The motivation for doing this is to increase the efficiency of the system.

For claims 2 and 10, Kloth teaches the ready indications are generated locally within the transport interface (see paragraph 0061).

For claims 4 and 12, Kloth teaches controlling transmission of the ready indications to the local Fibre Channel ports responsive to availability of buffer space at a remote transport interface (see paragraph 0067).

For claims 7 and 15, Kloth teaches the desired bandwidth sharing comprises a default equal sharing of bandwidth among the local Fibre channel ports (see paragraph 0053).

For claim 8 and 16, Kloth teaches receiving input selecting the desired bandwidth sharing (see paragraph 0053).

*Claim Rejections - 35 USC § 103*

9. Claims 3, 5, 6, 11, 13, 14, and 21 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kloth and the APA as applied to claim 1 and 9 above, and further in view of Dropps et al. (US 2005/0030893 A1; hereinafter “Dropps”).

For claim 3 and 11, Kloth and the APA teaches all of the claimed subject matter with the exception of receiving a buffer credit value from a first one of said local Fibre Channel ports; modifying said buffer credit value responsive to buffer space within said transport interface; and transmitting said modified buffer credit value to a remote Fibre Channel port via a transport network. Dropps from the same field of endeavor teaches that the associated with the buffers are credits and receiving ready signals will increase the credit and will lower the credit when a frame is transmitted (see paragraph 0031). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to buffer credit as taught by Dropps into Kloth's arbitration system. The motivation for doing this is to increase the reliability of the system.

For claim 5 and 13, Kloth teaches relaying traffic from the plurality of local Fibre Channel ports to a plurality of remote Fibre Channel ports via a transport network (see paragraph 0053). Kloth fails to teach combined maximum data rates of Fibre Channel links terminated

by said plurality of Fibre Channel ports through said transport network exceeds bandwidth available via said transport network. Dropps from the same field of endeavor teaches determining an over-subscription value based on a source port's data rate, a transmit port's data rate and an entry corresponding to a number of frames that are to be transmitted from the transmit port at a given time (see paragraph 0045). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to find the over-subscription value as taught by Dropps into Kloth's arbitration system... The motivation for doing this is to maintain an effective network.

For claims 6 and 14, Kloth teaches suppressing relaying of ready indications from said plurality of remote Fibre Channel ports to said plurality of local Fibre Channel ports (see paragraphs 0061 – 0064).

For claim 21, Kloth fails to teach receiving a login message from a remote channel pot and adjusting a granted credit based on available ingress buffer space at the transport interface. Dropps form the same field on endeavor teaches that the initial amount of credit is negotiated by two end of the link during login and the credit can be adjusted (see paragraph 0031). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to buffer credit as taught by Dropps into the arbitration system of Kloth... The motivation for doing this is to maintain an effective network.

For claim 22, Kloth fail to teach the ready indication are transmitted to the local Fibre Channel ports only if permitted by flow control between the transport interface and a remote transport interface. Droops from the same field of endeavor teaches congestion on a Fibre Channel network will prevent ports from transmitting frames while waiting for flow control

signals (the R\_RDY primitive signal in Fibre Channel) (see paragraph 0033). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to control the ready indication as taught by Dropps into the arbitration system of Kloth. The motivation for doing this is to maintain increase the performance of the system.

For claim 23, Kloth fails to teach an ingress buffer configured to use in oversubscription and an egress buffer configured to use in flow control. Dropps form the same field of endeavor teaches the system includes a first register that maintains information regarding a rate at which a source port can transfer data; a first counter that counts entries corresponding to a number of frames to be transmitted at a given time; and a second register that determines an over-subscription rate. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to perform oversubscription and flow control as taught by Dropps into the arbitration system of Kloth. The motivation for doing this is to provide increases the efficiency of the system.

### ***Claim Rejections - 35 USC § 103***

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kloth and the APA, as applied to claim 1 above, and further in view of Stoevhase et al. (US 5,748,612; hereinafter "Stoevhase").

For claim 19, Kloth fails to teach the bandwidth unused by one of the Fibre Channel links is available for another of the Fibre Channel links. Stoevhase from the same field of endeavor teaches making unused bandwidth available for use by other connections in the Fibre Channel system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of



the invention was made to use the unused bandwidth as taught by Stoevchase into the arbitration system of Kloth. The motivation for doing this is to provide increases the quality of the system by maintaining a minimum guaranteed bandwidth.

*Allowable Subject Matter*

11. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sheth et al. (US 2004/0202205 A1) is cited to show an apparatus and method for improved fibre channel oversubscription over transport.

13. **Examiner's Note:** Examiner has cited particular paragraphs or columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary Mui whose telephone number is (571) 270-1420. The examiner can normally be reached on Mon. - Thurs. 9 - 3 EST.

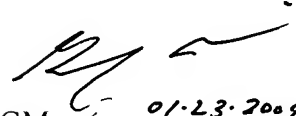
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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GM 01-23-2008

  
RICKY Q. NGO  
SUPERVISORY PATENT EXAMINER